

## EDUCATION

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- Oct 2018 to May 2022  
Sep 2016 to Jun 2018
- Doctor of Philosophy (Neuroscience)**, University of Melbourne  
**Master of Research - Neuroscience**, Université de Bordeaux
- » Ranked 1<sup>st</sup> in the cohort (received 'Mention Très Bien' [highest honours])
  - » Study emphases: Cognitive neuroscience, Pathophysiology of psychiatric disorders, M.R.I, Functional neuroanatomy, Statistics (using R)
- Jul 2011 to Mar 2013
- Post-graduate degree in Business Management (MBA)**, MICA, Ahmedabad
- » Study emphases: marketing, market research, consumer behaviour
  - » Master thesis: studying the behavioural response of women to the use of the colour pink in advertisements directed towards females
- Jul 2008 to Jun 2011
- Bachelor of Science (Honours) - Biochemistry**, University of Delhi
- » First Division (Highest class)
  - » Study emphases: Human physiology, metabolism, immunology, cell biology, molecular biology, genetics
- May 2008
- Rishi Valley School, ISC**
- » Ranked 1<sup>st</sup> in the cohort (science) - graduated with proficiency in Mathematics (94%), Biology (95%), Chemistry (92%) and Physics (86%)

## RESEARCH EXPERIENCE

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- Jul 2022 to present
- Postdoctoral Fellow, Harvard University**
- » Studying the effects of early adverse experiences on brain development and mental health during childhood and adolescence
- Feb 2022 to Jun 2022
- Research Assistant, University of Melbourne**
- » Projects: designing and implementing pipelines for open science practices in the lab, examining associations between brain development and mental health during adolescence
  - » Supervisor: Prof. Sarah Whittle
- Oct 2018 to present
- Doctoral Candidate - Neuroscience, University of Melbourne**
- » Studying the effects of early adverse experiences on brain development and mental health during childhood and adolescence
  - » Thesis submitted on 19/02/2022
  - » Supervisors: Prof. Sarah Whittle, A/Prof. Andrew Zalesky
- Jul 2021 to Feb 2022
- Research Assistant, Murdoch Children's Research Institute**
- » Systematic review the association between school connectedness and depression and anxiety during adolescence for the Wellcome Trust
  - » Supervisors: Prof. Susan Sawyer, Prof. George Patton, Dr. Monika Raniti
- Jan 2018 to Jun 2018
- Master Thesis**
- » Studied synaptic plasticity at CA3-CA3 recurrent collaterals *in vivo*.
  - » Techniques: *in vivo* patch-clamp electrophysiology, optogenetics, stereotaxic surgery, immunohistochemistry. Supervisor: Prof. Christophe Mulle and Dr. Ashley Kees (IINS, CNRS).
- Jan 2017 to Jun 2017
- Master Thesis**
- » Studied the effect of the restoration of the sleep/wake cycle, by antagonising the orexinergic system, on the cognitive and motor capabilities of mouse model of Huntington's disease. Supervisor: A/Prof. Yoon H. Cho (INCLIA, CNRS).

## PUBLICATIONS

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- 2022
- [*under review*] Thomas, M., **Rakesh, D.**, Whittle, S., Upthegrove, R., Sheridan, M., Cropley, V. The neural, stress hormone and inflammatory correlates of childhood deprivation and threat in psychosis: A systematic review, *Neuroscience and Biobehavioral Reviews*
- 2022
- [*in submission*] Pozzi, E., **Rakesh, D.**, Gracia-Tabuenca, Z., Bray, K., Richmond, S., Seal, M., Schwartz, O., Vijayakumar, N., Yap, M., Whittle, S., Maternal

- neglectful behavior is associated with delayed development of functional connectivity during the transition from late childhood early adolescence, *Journal of Child Psychology and Psychiatry*
- 2022 [under review] Jameei, H., **Rakesh, D.**, Zalesky, A., M.J., Reay, W.R., Wray, N., Di Biase, M. Linking MRI brain indices to polygenic risk for schizophrenia: a systematic review, *Schizophrenia Bulletin*
- 2022 [in revision] Elzeiny, R., **Rakesh, D.**, Vijayakumar, N., Whittle, S. A longitudinal study of childhood maltreatment, subcortical development and subcortico-cortical structural maturational coupling from early to late adolescence, *Psychological Medicine*
- 2022 [registered report under review] Mygind, L., **Rakesh, D.**, Allen, N. B., Vijayakumar, N., Youssef, G., Enticott, P.G., & Whittle, S. Associations Between Residential Greenness, Neurodevelopment, and Emotion Regulation in Adolescence, *Cortex*
- 2022 Raniti, M., **Rakesh, D.**, Patton, G., Sawyer, S. School connectedness and depression and anxiety during adolescence - a systematic review of prospective studies, *BMC Public Health [in press]*
- 2022 **Rakesh, D.**, Zalesky, A., Whittle, S. Assessment of Parent Income and Education, Neighborhood Disadvantage, and Child Brain Structure. *JAMA Network Open*, 5(8), e2226208-e2226208.
- 2022 Saragosa-Harris, N., Chaku, N., MacSweeney, N., Williamson, V. G., Scheuplein, M., Feola, B., ... **Rakesh, D.**, & Mills, K. L. (2022). A practical guide for researchers and reviewers using the ABCD Study and other large longitudinal datasets. *Developmental cognitive neuroscience*, 101115.
- 2022 **Rakesh, D.**, Zalesky, A., Whittle, S. (2022). The role of school environment in brain structure, connectivity, and mental health in children - a multi-modal investigation, *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging [in press]*
- 2022 Whittle, S., Pozzi, E., **Rakesh, D.**, Kim, J. M., Yap, M. B., Schwartz, O. S., ... & Vijayakumar, N. (2022). Harsh and inconsistent parental discipline is associated with altered cortical development in children. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging [in press]*
- 2022 **Rakesh, D.**<sup>1</sup>, Whittle, S.<sup>1</sup>... ENIGMA consortium. The role of educational attainment and brain morphology in major depressive disorder: findings from the ENIGMA Major Depressive Disorder consortium, *Journal of Abnormal Psychology [in press]*
- 2021 **Rakesh, D.**, Whittle, S. (2021) Socioeconomic status and the developing brain - a systematic review of neuroimaging findings in youth. *Neuroscience and Biobehavioral Review*, 130, 379-407.
- 2021 **Rakesh, D.**, Zalesky, A., Whittle, S. (2021). Similar but distinct-Effects of different socioeconomic indicators on resting state functional connectivity: findings from the Adolescent Brain Cognitive Development (ABCD) Study®. *Developmental Cognitive Neuroscience*, 101005.
- 2021 **Rakesh, D.**, Croyley, V., Zalesky, A., Vijayakumar, N., Allen, N. B., & Whittle, S. (2021). Neighborhood disadvantage and longitudinal brain-predicted-age trajectory during adolescence. *Developmental Cognitive Neuroscience*, 101002.
- 2021 **Rakesh, D.**, Allen, N. B., & Whittle, S. Longitudinal changes in within-salience network functional connectivity mediate the relationship between childhood abuse and neglect, and mental health during adolescence, *Psychological Medicine*, 1-13
- 2021 **Rakesh, D.**, Seguin, C., Zalesky, A., Croyley, V., & Whittle, S. Associations between neighborhood disadvantage, resting-state functional connectivity, and behavior in the Adolescent Brain Cognitive Development (ABCD) Study®: Moderating role of positive family and school environments, *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*
- 2021 **Rakesh, D.**<sup>1</sup>, Bastin, C.<sup>1</sup>, Harrison, B. J., Davey, C. G., Allen, N. B., Muller, S., & Whittle, S. (2021). Feelings of shame and guilt are associated with distinct neural activation in youth. *Biological Psychology*, 159, 108025.
- 2020 **Rakesh, D.**, Kelly, C., Vijayakumar, N., Zalesky, A., Allen, N. B., & Whittle, S. (2020). Unraveling the consequences of childhood maltreatment: deviations from typical functional neurodevelopment mediate the relationship between maltreatment history and depressive symptoms. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 6(3), 329-342

- 2020 **Rakesh, D.**, Lv, J., Zalesky, A., Allen, N. B., Lubman, D. I., Yücel, M., & Whittle, S. (2021). Altered resting functional connectivity patterns associated with problematic substance use and substance use disorders during adolescence. *Journal of Affective Disorders*, 279, 599-608.
- 2020 **Rakesh, D.**<sup>1</sup> & Díaz-Arteche, C.<sup>1</sup> (2020). Using neuroimaging to predict brain age: insights into typical and atypical development and risk for psychopathology. *Journal of Neurophysiology*, 124(2), 400-403.
- 2020 Pozzi, E.<sup>1</sup>, Vijayakumar, N.<sup>1</sup>, **Rakesh, D.**, & Whittle, S. (2021). Neural Correlates of Emotion Regulation in Adolescents and Emerging Adults: A Meta-analytic Study. *Biological Psychiatry*, 89(2), 194-204.
- 2020 **Rakesh, D.**, Allen, N. B., & Whittle, S. (2020). Balancing act: Neural correlates of affect dysregulation in youth depression and substance use—A systematic review of functional neuroimaging studies. *Developmental cognitive neuroscience*, 42, 100775.
- 2020 **Rakesh, D.**, Fernando, K. B., & Mansour L, S. (2020). Functional dedifferentiation of the brain during healthy aging. *Journal of neurophysiology*, 123(4), 1279-1282.
- 2019 Cabanas, M., Pistono, C., Puygrenier, L., **Rakesh, D.**, Jeantet, Y., Garret, M., & Cho, Y. H. (2019). Neurophysiological and behavioral effects of anti-orexinergic treatments in a mouse model of Huntington's disease. *Neurotherapeutics*, 16(3), 784-796.
- 2019 Cabanas, M., Piquemal, M., Pistono, C., Arnaud, S., **Rakesh, D.**, Poinama, E., ... & Cho, Y. H. (2020). Correlations between mutant huntingtin aggregates and behavioral changes in R6/1 mice. *Journal of Huntington's disease*, 9(1), 33-45.

<sup>1</sup>Co-first authors

## MANUSCRIPTS IN PREP

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- 2022 **Rakesh, D.**, Flournoy, J., McLaughlin, K. Different socioeconomic status indicators and mental health trajectories during early adolescence
- 2022 **Rakesh, D.**, Whittle, S., Sheridan, M., McLaughlin, K. Socioeconomic status and the pace of neurodevelopment: accelerated, delayed, or altogether different?
- 2022 **Rakesh, D.**, Lee, P., McLaughlin, K. Associations between socioeconomic status and cognitive function and academic achievement during childhood and adolescence - a systematic review of mechanisms and buffering factors
- 2022 Flournoy, J., **Rakesh, D.**, Byrne, M. Exclusions threaten inference in ABCD
- 2022 Zhang, L., **Rakesh, D.**, ... Whittle, S. A systematic review of the link between the brain and resilience function in childhood and adolescence

## RESEARCH FELLOWSHIPS AND SCHOLARSHIPS

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- May 2022 **Flux Travel Award** (\$750), awarded to talented students based on scientific merit and an evaluation of a written application
- Oct 2018 to Apr 2022 **Melbourne Research Scholarship (\$70,000p.a. \* 3.5 years)** - full fee remission of \$39,000p.a. + \$31,000p.a. living allowance). Awarded to high achieving PhD students.
- Oct 2018 to Oct 2021 **Nick Christopher Scholarship (\$18000)**, awarded by the University of Melbourne to the two highest ranked incoming PhD students in the Melbourne Medical School
- Dec 2020 **Society for Biological Psychiatry (SOBP) Predoctoral Travel Fellowship (\$2000 stipend** + waived registration fees for three years). International fellowship awarded based on past excellence in scholarly work, potential for scholarly growth in biological psychiatry and clinical neuroscience, and overall excellence.
- Feb 2020 **Graham Burrows Travel Scholarship (\$4500)**, awarded by the University of Melbourne to one student annually for research related travel.
- Nov 2018 **Rowden White Scholarship (\$6500)**, awarded annually by the University of Melbourne to a few talented, high quality PhD students.
- May 2018 **Trinity College Dublin PhD Studentship Award (€21,000p.a. \* 3 years)** - full fee remission of €14,500p.a. + €6500p.a. living allowance). Awarded to

high achieving PhD students \*Declined in order to accept the Melbourne Research Scholarship

## HONOURS AND AWARDS

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Jun 2022	<b>Flux Dissertation Award</b> (awarded annually to one person to recognise an exceptional, rigorous, and meticulous dissertation by one of the Flux Societies trainee members)
Apr 2022	<b>Finalist - Schmidt Science Fellowship</b> (finalist amongst a group of highly accomplished candidates, nominated from 83 of the world's leading universities and research institutes, and recognized by University of Melbourne as one of their most promising PhD students)
Feb 2022	<b>Best Paper Award</b> (PhD Student - Basic Science Category; \$1000 + free registration and membership), Society for Mental Health Research (SMHR)
Dec 2021	<b>Mendelsohn Neuroscience Thesis Prize</b> (Second Runner-up), Awarded annually to outstanding doctoral students in the Neurosciences, University of Melbourne
Sep 2021	<b>Student &amp; Early Career Researcher Excellence Plenary</b> , Biological Psychiatry Australia for outstanding achievement in biological psychiatry research and significant contribution to scientific leadership and outreach
June 2021	<b>People's Choice Award</b> , Australian Society for Social and Affective Neuroscience (AS4SAN) annual YouTube competition
Dec 2020	<b>Best Oral Presentation Award</b> , Department of Psychiatry Annual Research Symposium, University of Melbourne
Dec 2020	<b>Best Abstract Award</b> , Mental Health PhD Program Annual Conference, University of Melbourne
Sep 2020	<b>Velma Stanley Award (\$2500)</b> for paper entitled 'Altered whole-brain functional connectivity patterns associated with substance use disorders and problematic substance use during adolescence'. Awarded annually by the University of Melbourne to one person for an essay/paper on substance use.
Oct 2019	<b>Best Poster Presentation Award</b> , Biological Psychiatry Australia, 2019
Aug 2019	<b>Best Poster Presentation Award</b> , Department of Psychiatry Annual Research Symposium, University of Melbourne
Jun 2018	<b>Ranked 1<sup>st</sup> in the program</b> - Masters by Research, Neuroscience
Jun 2018	<b>Best Oral Presentation Award</b> at 'International Scientific Day', the annual student symposium (organised by the Neuroscience in Bordeaux Association)

## CONFERENCE PRESENTATIONS

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Sep 2022	<b>Flux Dissertation Award Talk</b> Invited Talk at FLUX Congress 2022
Apr 2022	<b>Poster</b> Presentation at <b>Society for Biological Psychiatry (SOBP)</b>
Dec 2021	<b>Oral</b> Presentation, Department of Psychiatry Annual Symposium
Oct 2021	<b>Keynote: Student and ECR Excellence Plenary</b> , Biological Psychiatry Australia
Sep 2021	<b>Poster</b> Presentation at <b>FLUX Congress</b>
Jun 2021	<b>Invited to lead a workshop on functional connectivity methods</b> at AS4SAN (Australian Society for Social and Affective Neuroscience)
Jun 2021	<b>Symposium presentation (oral)</b> at Biological Psychiatry Australia Virtual Symposia Series
Jun 2021	<b>Oral</b> presentation at AS4SAN (Australian Society for Social and Affective Neuroscience)
Apr 2021	<b>Poster</b> Presentation at <b>Society for Biological Psychiatry (SOBP)</b>
Dec 2020	<b>Oral</b> presentation at Medicine Dentistry and Health Sciences (MDHS) Graduate Research Conference and Mental Health PhD Program Annual Conference
Nov 2020	<b>Oral</b> presentation at Department of Psychiatry Annual Symposium
Oct 2020	<b>Oral</b> presentation at Biological Psychiatry Australia (BPA) 2020
Sep 2020	<b>Oral</b> presentation at <b>FLUX Congress</b>
Jun 2020	<b>Poster</b> Presentation at <b>Organization for Human Brain Mapping (OHBM)</b>
Nov 2019	<b>Symposium presentation (oral)</b> at <i>Society for Mental Health Research (SMHR) 2019, and</i>

Oct 2019	<b>Symposium presentation (oral)</b> at <i>Australian Cognitive Neuroscience Society (ACNS) 2019</i>
Oct 2019	<b>Oral</b> presentation at Students of Brain Research Annual Symposium (SOBR) 2019
Oct 2019	<b>Poster</b> presentations at Biological Psychiatry Australia 2019
Aug 2019	<b>Poster</b> presentations at The University of Melbourne Psychiatry Symposium 2019
May 2017	<b>Poster</b> presentation at NeuroFrance 2017

## TEACHING AND SUPERVISION

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2022 to present	<b>Supervisor of PhD Candidate</b> , Lu Zhang (awarded the Nick Christopher Scholarship for high-ranking PhD students)
2019 to 2021	<b>Teaching Associate</b> , Melbourne School of Psychological Sciences, University of Melbourne, Subjects: Biological Psychology and Cognitive Psychology
2021	<b>Supervisor of year-long honours research projects</b> (student: Reham Elzeiny; awarded the Department of Psychiatry Honours Award) on the association between adversity, brain development, and mental health
2021	<b>Supervisor of year-long honours research projects</b> (student: Chrysoula Tsiapas) on the association between adversity, brain development, and mental health
2019	<b>Supervisor of year-long honours research project</b> on examining aberrations in whole-brain functional connectivity in subclinical psychosis (student: Kavisha Fernando; awarded the Department of Psychiatry Honours Award)
2019	<b>Supervisor of 6-month Master's thesis</b> on the neural correlates of guilt and shame (student: Fenna Mensonides), University of Melbourne

## MEDIA AND PUBLIC OUTREACH

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2022	<i>[under review]</i> <b>Article for Frontiers for Young Minds</b> - 'How the neighborhoods we grow up in shape our brains, and why home and school environments matter'
2022	<b>Article in 'The Mental Elf'</b> : <u>School connectedness, anxiety and depression: recent evidence and young people's perspectives</u>
2021	<b>Press release</b> by Biological Psychiatry: CNNI
2021	<b>Radio Interview: 3CR</b> (Radical Philosophy), <i>'Shaping children's brains'</i>
2021	<b>Article in 'The Conversation'</b> , <u>Growing up in a rough neighbourhood can reshape kids' brains – but good parenting and schooling can help (&gt; 20,000 reads)</u>
2021	<b>Radio Interview: RRR 102.7FM</b> , Featured on Einstein a go-go's 20PhDs20Minutes
2020	<b>News Article</b> , Pursuit Magazine, <u>"The Legacy of Maltreatment on the Brain"</u>

## CONTRIBUTION TO PEER-REVIEW

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2020 to present	<b>Peer reviewed</b> articles for several <b>prestigious journals</b> :
	» Biological Psychiatry
	» Biological Psychiatry: CNNI
	» Psychological Medicine
	» Neuroimage Clinical
	» Developmental Cognitive Neuroscience
	» Developmental Psychobiology
	» Health and Place
	» Risk Management and Healthcare Policy
	» European Journal of Neuroscience

## PROFESSIONAL EXPERIENCE

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- Nov 2015 to Aug 2016 **Manager - Marketing**, Nykaa, Mumbai
- » Analysing market research data and digital consumer behaviour
  - » Launch of the Nykaa private label and formulating the IMC
- Jul 2013 to Nov 2015 **Assistant Manager - Marketing**, L'Oréal
- » Responsible for all brand growth targets and brand financials for Vichy, India
  - » Understanding and analysing market research data
  - » Conducted consumer panels, focus group discussions and other research to derive consumer insights
  - » Designed and implemented a 360° Integrated Marketing Campaign

## LEADERSHIP POSITIONS

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- 2023  
2022 **Chair, Flux Trainee Committee**  
**Flux Trainee Committee member**
- » Organised and moderated a panel discussion on grant/fellowship writing at Flux Congress 2022
  - » Assisting with other trainee events and concerns
- 2022 to 2023 **Flux Diversity and Inclusion Committee member**  
2021 **BrainHack 2021**, Social Committee  
2022 **Higher Degree by Research Course Review Panel Member**, University of Melbourne
- 2021 to present **Department of Psychiatry Research Committee member**, University of Melbourne
- 2020-2022 **Academic Board's Higher Degrees by Research Committee member** - member of a senior university committee that makes decisions on HDRs, University of Melbourne
- 2019 to 2020 **Academic Board's Academic Programs Committee member** - member of a senior university committee that makes decisions on academic programs, University of Melbourne
- 2019 to 2020 **Executive Committee Member**, Students of Neuropsychiatry Research (SONR) graduate group, University of Melbourne
- 2011 to 2013 **Senior Editor and President**, Literary Committee, MICA, Ahmedabad, India  
2010 to 2011 **Vice President**, English Debating Society, SVC, University of Delhi  
**Editor in Chief**, Science Magazine, 'Expressions', SVC, University of Delhi

## EXTRA-CURRICULAR ACTIVITIES

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### Internships and Volunteer Work

- July 2017 to Aug 2017 **Intern**, with Dr. Anil Kumar (M.D. Psychiatry)
- » Assisted in conducting clinical assessments acquiring patient history
- Dec 2014 to Apr 2015 **Mentor**, Green Batti Project, Mumbai
- » Mentored children from underprivileged backgrounds through academic and personal difficulties
- Apr 2012 to Jun 2012 **Intern**, L'Oréal, Mumbai
- » Studied online behaviour of L'Oréal consumers in order to devise marketing strategies
- May 2009 **Intern**, C.A.R.E (Cooperative for Assistance and Relief Everywhere)
- » Rural health initiative to implement the Integrated Child Development Scheme (ICDS), a centrally sponsored scheme to ensure proper growth and development of children in rural, tribal and slum areas of rural Jharkhand, India.
- June 2009 **Rural auditor**, M.N.R.E.G.A under Jean Dreze
- » Raised awareness about 'Right to Employment', minimum wage and the Mahatma Gandhi National Rural Employment Guarantee Act, and audited the scheme's implementation while living in rural Jharkhand, India

**Skills**

**MATLAB, Python, R,** Microsoft Excel, Prism, Adobe Illustrator, Adobe Indesign, Adobe Lightroom

**Interests and Activities**

Portrait photography, debating, writing poetry, yoga, mridangam, bird-watching, reading, handball, Carnatic vocals

**Languages**

English (native), Hindi (native), French (B2), Bengali (B1), Urdu (B2)